# Battery Replacement

## Potential Environmental Impacts:

If handled improperly, lead acid batteries pose certain hazards. Battery components are toxic and corrosive, and can also be a fire and explosion hazard. Lead and sulfuric acid can contaminate the air, soil and water. Direct contact with sulfuric acid can burn the skin and eyes. Exposure to lead in the environment can pose a serious health hazard to children. Lead, which is very toxic to aquatic life, can enter marina basins through stormwater when spent lead acid batteries are not managed properly.

## Legal Requirements:

- Spent lead acid batteries must be recycled in Connecticut, and may not be disposed of with other solid wastes [RCSA §22a-241b-2(1)(H), CGS §22a-256g(a)].
- If you sell lead acid batteries at your facility, you must accept a used lead acid battery for each new battery that is sold to a customer. Consumers that are not returning a used battery with the purchase of a new battery must pay a five-dollar "core" charge. Retailers must post written notice informing consumers of these requirements [CGS §§22a-256h and –256i].
- There are two options for managing spent lead acid batteries prior to sending them for off-site reclamation. Batteries can be managed according to the so-called Universal Waste Rule [RCSA §22a-449(c)-113, 40 CFR 273] or, alternatively, under special lead-acid battery recycling rules [RCSA §22a-449(c)-106(c)] (see below).
- **Universal Waste Rule requirements.** Marinas that store less than 5,000 kilograms (11,000 pounds) of spent lead-acid batteries would be classified as "Small Quantity Handlers" under these rules. Such handlers are required to do the following [40 CFR 273 Subpart B, RCSA §22a-449(c)-113(a)]:
  - ➤ Mark all batteries (or containers holding such batteries) with the words "Universal Waste – Batteries," "Waste Batteries," or "Used Batteries."
  - ➤ Store batteries for no more than one year before sending them off-site for recycling.
  - ➤ Place any battery that shows signs of leakage, spillage, or damage in a container that is kept closed, is structurally sound, and is compatible with the contents of the battery.
  - ➤ Immediately contain any releases of batteries or electrolyte.
  - ➤ Before shipping batteries off-site, ensure that they are packaged, marked, labeled, and placarded in accordance with U.S. DOT rules for hazardous materials.
  - ➤ Ship the batteries to another Universal Waste handler, or to an authorized destination facility for recycling. Prior to shipment, ensure that the receiving facility agrees to receive the shipment. Any shipments which are rejected must be taken back, or directed to another handler or destination facility.

In addition, if you transport batteries from one site to another, you must comply with Universal Waste transporter requirements [40 CFR 273 Subpart D].

- **Lead acid battery recycling rules**. Persons managing their lead acid batteries under this set of rules must do the following [RCSA §22a-449(c)-106(c)]:
  - ➤ Segregate batteries from paper, rags, garbage, flammables, scrap metal or hazardous chemicals by means of a dike, berm, wall or other physical barrier.
  - ➤ Store spent lead acid batteries on an impervious surface (such as concrete sealed to protect the surface from degradation), and inspect spent lead acid batteries weekly for leaks and deterioration.
  - ➤ Open, handle or store spent lead acid batteries so that the battery case does not rupture, leak, or produce short circuits.
  - ➤ Although the lead-acid battery recycling rules do not specifically require it, before shipping batteries off-site, ensure that they are packaged, marked, labeled, and placarded in accordance with U.S. DOT rules for hazardous materials.
- Regardless of which set of rules lead-acid batteries are managed under, a hazardous waste determination must be conducted on spilled acid and broken lead acid batteries, and any materials used to clean a spill, to establish whether or not their disposal is subject to hazardous waste regulations [40 CFR 262.11; RCSA §22a-449(c)-102(a)(2)(A)]. Manage hazardous waste as described in the Appendix B.
- If there is a stormwater discharge from your facility, you may have to register for a *General Permit for the Discharge of Stormwater Associated with Industrial Activity* ("Stormwater General Permit"). See Appendix F for more information.
- Report the chemicals in lead acid batteries (sulfuric acid and lead) as part of your hazardous and toxic chemical inventory and notifications required under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [40 CFR 355] if over 500 pounds of batteries are stored on-site. See Appendix A for more information on EPCRA requirements.

## Best Management Practices:

- ✪ Avoid long-term storage of lead acid batteries by sending accumulated batteries to a reclaimer within six months of receipt. Limit accumulation of large quantities of spent batteries. If necessary, ship more frequently.
- ✪ Store spent lead acid batteries upright in a secure location, protected from the elements.
- ✪ Never stack batteries directly on top of each other. Layer with wood.
- ✪ Never drain batteries or crack the casings.
- ✪ Place cracked or leaking batteries in a sturdy, acid-resistant, leak-proof, sealed container (e.g., a sealable 5-gallon plastic pail). The container should be kept closed within the battery storage area.

- Strap batteries to pallets or wrap batteries and pallet in plastic during transport.
- Keep written records of weekly inspections of spent lead acid batteries.

## Checklist for Clean Marina Certification:

✔ Do you store spent lead acid batteries in a covered area, layered with wood, if stacked?

**YES** **NO** **N/A**